



July/August 2019

Explorer

NO SHADE ON THE GLADE

LIFE'S HOT IN
MISSOURI'S
MINI DESERTS



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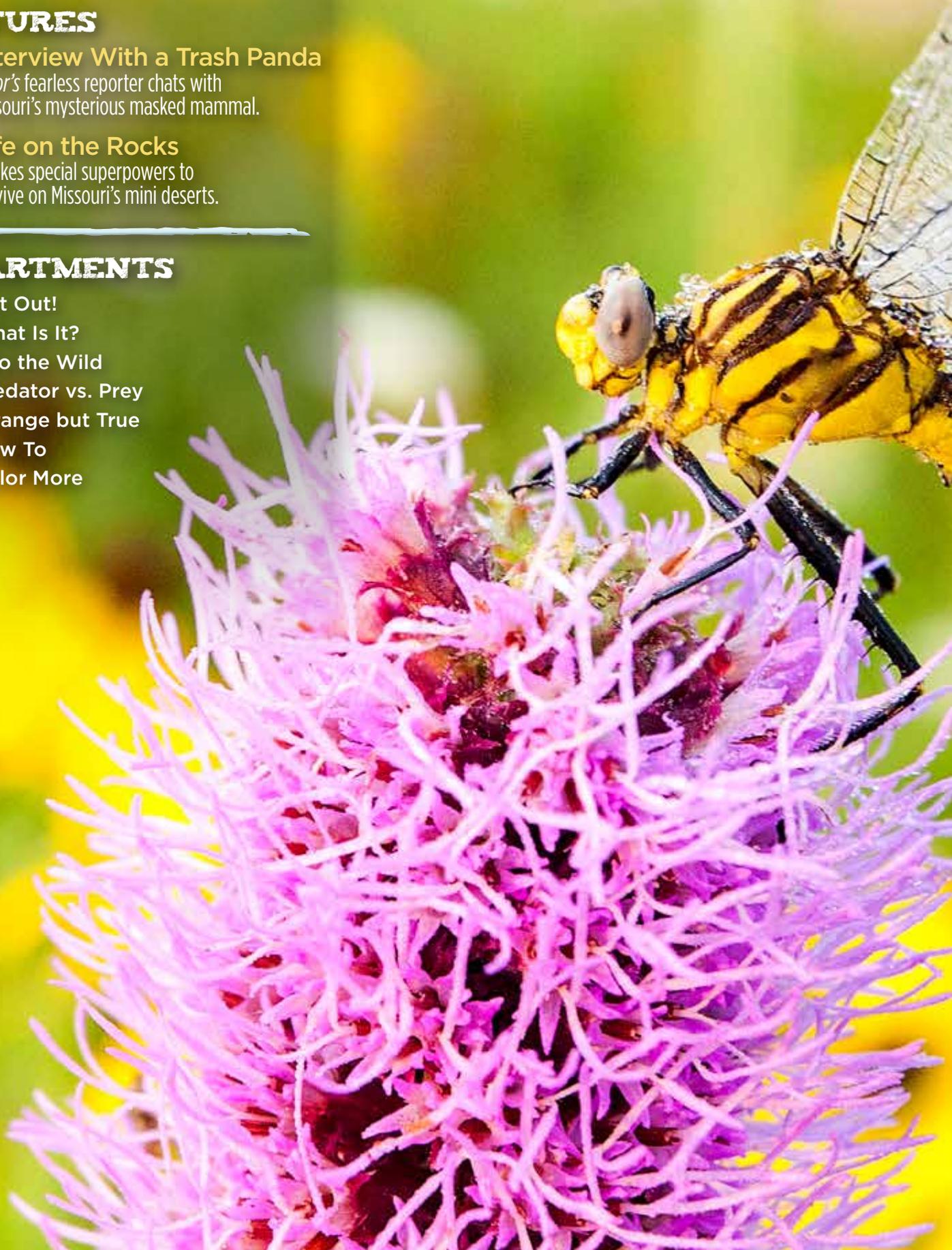
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A flag-tailed spinyleg waits for its dewy wings to dry while perched atop a blooming blazing star.

📷 by Noppadol Paothong

Xplor

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ON THE COVER

Collared Lizard
by Jim Rathert

GET OUT!

FUN THINGS TO DO
AND GREAT PLACES
TO DISCOVER NATURE

WATCH FOR YOUNG
HUMMINGBIRDS AT
YOUR FEEDERS.



SEARCH A GLADE FOR
SCORPIONS AT NIGHT.

They glow white under a black
light. See Page 12 to learn
more about glades.



Blackberries
ripen in July.
**PICK SOME
TO MAKE THIS
EASY BLACKBERRY
PIE RECIPE** at

short.mdc.mo.gov/ZN9.

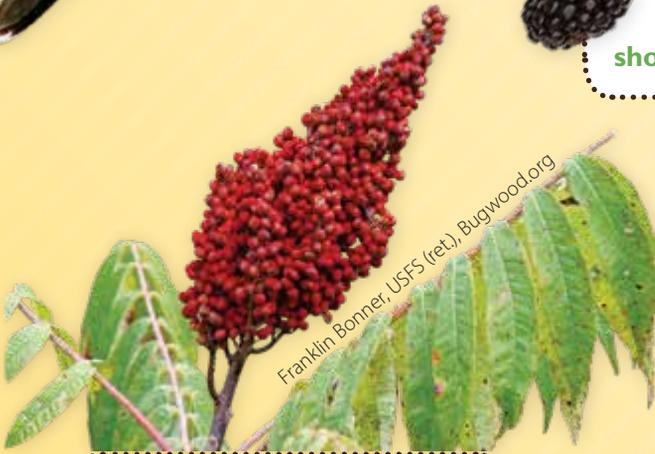


**KIDS FISHING
DAY AND
NATURE
FESTIVAL** at

Roaring River State
Park Hatchery in
Cassville on Saturday,
August 17 from 7
a.m.–8 p.m. Visit
[short.mdc.mo.gov/
ZxH](http://short.mdc.mo.gov/ZxH) for more info.



Tangy, edible sumac fruits ripen
in August. **TRY MAKING
SUMAC-ADE.** Soak the
berries in water, then strain,
and add sugar to taste.



GO ON A WOLF HUNT.

Aim a flashlight into leaf
litter after dark to spot
the green eye-shine
of wolf spiders.



WHAT IS IT?

DON'T KNOW?
Jump to Page 20 to find out.



- ① As a larva, I cling to the trees ...
- ② ... with bristles at the ends of my “toes.”

- ③ I look like bird poop when young.
- ④ Then become a great beauty when grown.

Into the WILD

loess hill prairie

Take a trip to the northwest tip of Missouri for hilltop views and plenty of interesting plants and animals.

LOOK

Plains pocket mice can go months without sipping a single swallow of H₂O. The gerbil-sized fur balls get most of their water from the seeds they eat. Although Star School Hill Prairie is the best place in Missouri to find a pocket mouse, you're unlikely to spot one. Pocket mice snooze away the day deep in their burrows and come out at night to feed.



Heads Up!

Cool critters and groovy grasses aren't the only things that love loess prairies. So do ticks. Wear long pants and spray on repellent to keep the bloodsuckers at bay.



Tick

LOOK

Loess soils drain quickly, and the treeless hilltops get tons of sun. Because it's so dry and hot, many plants that are more common farther west thrive here. How many of these visitors from the Great Plains can you find?



Locoweed contains selenium, a substance that makes cows go loco — act crazy — if they eat too much of the plant.



Pale Indian paintbrush



Soapweed yucca



Skeleton plant



Purple locoweed

What Happened Here?

Long ago, glaciers ground up rocks into a powdery soil called loess (*lus*). When the glaciers melted, violent storms blew the loess into Missouri. Over time, the soil piled up to make steep hills. In some places, the loess may be over 100 feet deep.

Where to Go

The best examples of loess hill prairies are found in Atchison and Holt counties, which are located in the extreme northwest corner of Missouri.

- 1 Brickyard Hill Conservation Area
- 2 McCormack Conservation Area
- 3 Star School Hill Prairie Conservation Area

3
1
2

Did You Know?

On a clear day atop **Star School Hill Prairie**, you can see into four states: Missouri, Iowa, Nebraska, and Kansas.



Take a Closer Look

If you see something buzzing above a flower, it may not be a bee. **White-lined sphinx moths** hover over flowers to sip nectar with their tubelike tongues. Unlike their moon-loving cousins, these moths are out during the day.



Bobolink



Dickcissel



Upland sandpiper

LOOK

With plenty of yummy seeds and bugs, prairies attract birds the same way pizza buffets attract little league teams. Keep your eyes peeled, and you might see one of these grassland-loving birds swoop in for a snack.



Interview
With a

Trash Panda



by Matt Seek

***Xplor's* fearless reporter braves the forest after dark to chat with Missouri's most mysterious masked mammal.**

I meet my subject at dusk. He emerges from the gloom of the woods, a chubby specimen, with a bushy ringed tail and that trademark black mask. Over the course of an hour, I ask questions, and he gives answers. We communicate through a series of chatters, chuckles, and purrs. Using my vast knowledge of raccoonesse, I have translated our conversation into English.

Xplor: Why wear a mask? What are you hiding?

Raccoon: Really? You're going to start off with that? First, it's not a mask. It's black fur around my eyes. And second, I'm not hiding anything. The fur works like the dark strips that baseball players wear under their eyes. It cuts down glare from sunlight or moonlight, which helps me see better.

Come on,
really?



X: Interesting. I didn't know that about raccoons.

R: Bud, I could fill a book with things people don't know about raccoons.

Let's begin.

X: Such as?

R: Raccoons are astonishingly adaptable. Back in the day, when your ancestors were blundering West in covered wagons, my ancestors lived in forests, mostly in the southeastern United States. Now, raccoons have spread all the way across the country, up into Canada, and down into Central America. We're everywhere.



X: Not everywhere. I live in the city. There aren't raccoons in my neighborhood.

R: I bet you have a furry neighbor or two you don't know about. Biologists think nearly every city block is likely to have a raccoon living on it. In some places, there may be 100 times more raccoons living in the city than in the nearby countryside. People don't see us because we come out at night.

So many questions!



X: What do you do during the day?

R: I sleep. I curl up in a hollow tree or in an empty woodchuck burrow. City raccoons sleep in abandoned buildings, chimneys, attics — wherever.

X: Raccoons must be good climbers.

R: You got that right. We can climb anything: trees, chimneys, skyscrapers. I got a cousin, lives up in St. Paul, Minnesota. Last summer he got this crazy idea to climb the tallest building in the 'hood. Up he goes, 25 stories, all the way to the top. Made national news.



© Anne Wright Dobbelsteyn | Dreamstime.com

© ifeelstock | Dreamstime.com

X: What happened at the top?

R: He got his furry bottom busted by animal control. See, he was super hungry. He'd just climbed a 25-story building, you know? So the first thing he smells on the roof is the delicious aroma of cat food. Followed his nose right into a cage. He chowed down on Mr. Whiskers while animal control drove him outside city limits to turn him loose.

I'm innocent I tell ya.



© Anolis01 / Dreamstime.com

X: Raccoons like cat food?

R: Oh, yeah. We're omnivores. That means we'll eat just about anything. Cat food, dog food, human food, crayfish, fish fish, mussels, frogs, turtles, turtle eggs, bird eggs, insect eggs, insects, mice, birds, birdseed, persimmons, grapes, blackberries, corn, acorns, pecans ...

Rub-a-dub-frog!



X: OK. I get it. You eat lots of things.

R: Rats.

X: You eat rats, too?

R: No. Rats, now I'm hungry. Follow me.

I follow my subject through the woods to a gurgling stream. The flowing water glitters in the moonlight. In no time, the raccoon catches a small frog and proceeds to eat it — crunch, crunch — dunking the hapless creature in the stream between bites.

X: Why do you wash your food?

R: Wash my food? *Bwahahaha!* You think an animal that snarfs down three-day-old pizza from a trash can worries about germs?

.....



X: Then what are you doing?

R: I'm feeling around for my next snack. Raccoons have sensitive paws. Four to five times more sensitive than other mammals as a matter of fact. And a large part of my noggin is set up to figure out what I'm touching. You want to know my superpower? I can "see" something just by feeling it.

X: That's amazing. Do you have any other superpowers?

R: What? The skyscraper climbing, ability to eat everything, and super-sensitive digits aren't enough? OK, here's one: Raccoons are crazy clever.

X: How so?

R: Studies in the 1900s ranked us equal to monkeys and well ahead of cats and dogs in brainpower. Translation: If there's food somewhere, we'll think up a way to get it. We can open camping coolers, unzip tents, crawl through pet doors, pry off trash can lids ...



© Landshark1 | Dreamstime.com

X: Let's shift gears a bit. Tell me about your family.

R: I live alone most of the year. Mama raccoons do all the baby raising. Kits — that's what we call baby raccoons — are born in April or May, and each mama usually has three or four of the little bandits.

X: How long do kits stay with their mother?

R: Long enough. Mama raccoons have to teach their kits how to climb trees, how to find food, and how to escape from predators like bobcats, coyotes, and owls. It's a ton of work. By fall the kits are usually smart enough to fend for themselves, but some stick with mom until the following spring.



© Dariya Maksimova | Dreamstime.com

X: Why are raccoons nicknamed “trash pandas”?

R: If dumpster diving were an Olympic sport, I’d be on the cover of a cereal box. You humans throw away so much food! Nothing better than dumpster doughnuts, am I right?

X: That explains the first part of your nickname. What about the panda part?

R: Some people think raccoons are related to giant pandas.

X: Are you?

R: All mammals are related, nature boy. But raccoons are more closely related to weasels and river otters than bears and pandas. Personally, I don’t like being called trash panda. It’s rude. Call me raccoon or, if you want to sound like a smarty pants, use my scientific name: *Procyon lotor*.

X: How do you spell that?

R: How should I know? I’m a raccoon.



Keep Raccoons Wild

Just because raccoons can live nearly *anywhere* doesn’t mean we want them *everywhere*. Follow these tips to keep raccoons out of trouble.

- Feed your pets indoors.
- Keep tight-fitting lids on outdoor trash cans.
- Do not keep raccoons as pets. Baby raccoons are adorable, but grown-up raccoons become cranky and dangerous.
- If you see an injured raccoon or an abandoned kit, don’t try to rescue it. Call animal control.
- Help your parents put a cap on your house’s chimney and seal up any openings that may allow raccoons to enter your attic or crawl space.

LIFE ON THE ROCKS

by Bonnie Chasteen



It takes special superpowers to live on Missouri's glades.

Everybody knows that scorpions and roadrunners live in hot, dry, cactus-filled deserts. The Show-Me State doesn't have sand dunes, but we do have a few areas where desert critters make their home. These little hot spots are called glades.

In Missouri, you'll find glades mostly on south- or west-facing slopes in the Ozarks, where layers of rock jut through the surface in forests, woods, and prairies. Let's take a look at some of the awesomely adapted plants and animals that live there.



Lichen likes life on the rocks!

Super-Powerful Plants

If you're a glade plant, you need ways to live without much water. Prickly pear cactus stores water in its thick leaves to use in times of drought. Hoary puccoon has tiny hairs to slow water's evaporation from its stems. Prairie dock has super-long roots that wind through cracks in the rock, seeking water deep down in the ground. Rock-hugging plants like mosses trap water in spongy mats.



Prickly pear cactus

Kinds of Glades and Where to See Them

Glades take their names from the type of bedrock they form on.

Limestone glades — Limestone is a crumbly, holey, cool-looking sedimentary rock made from layers of calcium carbonate and bits of fossilized coral and seashells.

- 1 Rocky Barrens Conservation Area
- 2 Springfield Conservation Nature Center
- 3 Wilson's Creek National Battlefield

Dolomite glades — Dolomite is a mineral that makes up a coarser, harder kind of limestone.

- 4 Victoria Glades Conservation Area
- 5 Ha Ha Tonka State Park
- 6 Henning Conservation Area

Chert glades — Chert is a hard, sedimentary rock related to flint. These glades are found along streams near Joplin in southwest Missouri.

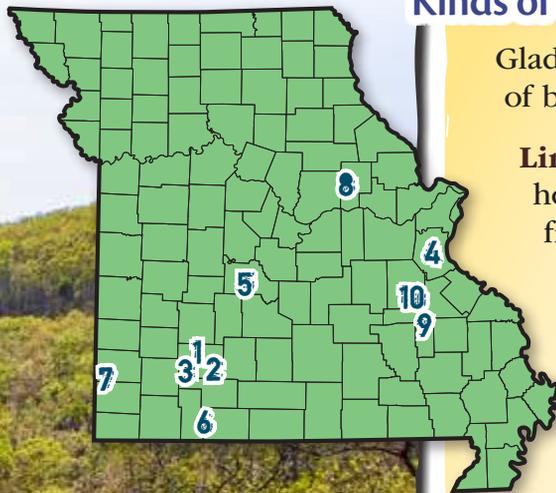
- 7 Wildcat Glade Natural Area

Sandstone glades — Yet another kind of sedimentary rock, sandstone is made up of tiny specks of sparkly quartz or feldspar.

- 8 Graham Cave State Park

Igneous glades — "Igneous" means "volcanic." The rocks that form the knobs, mountains, and shut-ins in southeast Missouri hardened from ancient lava flows.

- 9 Ketcherside Mountain Conservation Area
- 10 Hughes Mountain Natural Area



Prairie dock

Amazing Animal Adaptations

If you're a glade animal, you need ways to escape the scorching heat and the many other animals that want to eat you. The eastern small-footed bat lives among trees at the glade's edge. It sleeps under rocks or tree bark during the day, and at night it flits around the glade's open areas, scooping up flying insects.

Another animal that avoids the heat is the tarantula. You will rarely see this big, hairy spider because it hunts for insects at night. By day, it hides in rocky crevices or abandoned burrows dug by rodents or lizards.

Cold-blooded snakes and lizards love living in glades. Here they can warm themselves on rocks and hide among the crevices when the sun gets too hot or when predators appear. If you're lucky, you might spot the colorful eastern collared lizard. This fast runner often boogies along on its hind legs with the forward part of its body upright.

Maybe the collared lizard runs on its hind legs to catch a meal — or to avoid becoming a roadrunner's lunch. Roadrunners love to eat lizards, snakes, insects, and rodents. Roadrunners can fly, but they usually use their strong legs to chase their prey — or to escape a wily coyote.



Eastern small-footed bat

Caution!

Many glade creatures such as rattlesnakes, scorpions, and centipedes are fun to see, but they're venomous and can deliver painful, dangerous bites or stings. Watch your step and where you put your hands.



Striped bark scorpion



Female collared lizard

Male collared lizard

Texas brown tarantula





Lichen grasshopper

Hiding in Plain Sight

Insects make up a large part of glade life, serving as food for critters like the variable groundsnake. To avoid their predators, glade insects have adapted cunning disguises. The lichen grasshopper, for example, is virtually invisible, even when it is sunning itself out in the open. It can be light gray, pink, or green with dark spots, depending on the color of the rock it is resting on. This slow-moving insect is easy to catch — if you can see it!

Camouflage also helps the striped bark scorpion hide. These venomous creatures are the same color as the rocks and logs they live under. Missouri's only scorpion comes out at night to hunt for insects and spiders. It uses the sharp stinger at the end of its tail to inject venom in its prey.



Greater roadrunner



Coyote



Walk Lightly and Take Nothing but Photos

When you visit a glade, you may be tempted to turn over rocks or pick flowers. But this harms the plants and animals that live there. Take a photo instead. It will remind you what a great time you had — and it will help you protect one of Missouri's fragile little deserts.

THIS ISSUE:

ROADRUNNER VS WESTERN PYGMY RATTLER

Illustrated by David Besenger

Head-to-Tail Terror

Laser-sharp eyes guide a jabbing beak. Fast, powerful legs and a rudderlike tail and wings keep the bird bobbing and weaving.

Fanged Fury

Powerful coils, a lightning-fast strike, and venomous fangs force a fight to the finish.

AND THE WINNER IS...

The roadrunner wins. It grabs the rattler's upper jaw in its beak and slams the head against the ground until the snake is dead.

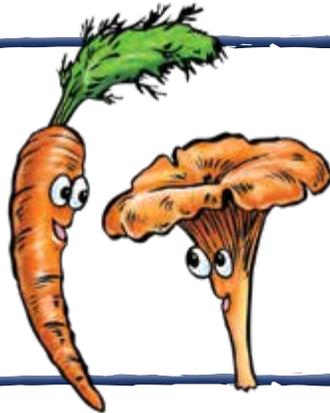
STRANGE but TRUE!

YOUR GUIDE TO ALL THE
UNUSUAL, UNIQUE,
AND UNBELIEVABLE STUFF
THAT GOES ON IN NATURE



Fish can be a real pain in the neck! **GREAT BLUE HERONS** have no trouble snaring fish in their blade-like beaks. But swallowing their catch can be a different story. Herons have choked to death by gulping fish too big to fit down their skinny throats.

CHANTERELLES pop up in woods across Missouri in July. The tasty yellowish-orange mushrooms contain carotene, the same chemical that gives carrots their signature color.



Bad hair day: During summer, you might spot a bare-headed **NORTHERN CARDINAL**. In most cases, the bird has simply molted all of its head feathers at once rather than a few at a time. The bald bird's "hair" will usually grow back within a week.



When a **WALNUT SPHINX CATERPILLAR** gets pecked by a bird, it lets loose a loud shriek.

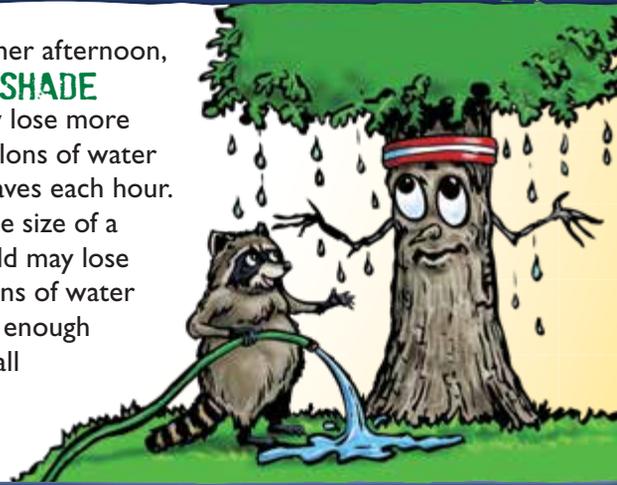


The caterpillar's cry sounds like the call birds use to warn each other of danger. And it usually makes the bird drop the wailing worm and fly for cover.

Insects known as **SHARPSHOOTERS** fling their pee using a catapult on their tails. The insect's *tail-apult* launches tinkle faster than a cheetah can accelerate. Trees infested with these sap-sucking pests rain a pitter-patter of pee.



On a summer afternoon, a **LARGE SHADE TREE** may lose more than 50 gallons of water from its leaves each hour. A forest the size of a football field may lose 8,000 gallons of water per day — enough to fill a small swimming pool.



Life for **PRAIRIE VOLES** has its highs and lows. Numbers of the stubby-tailed, hamster-sized rodents go up and down about every four years. When their numbers peak, a meadow the size of a soccer field may contain 800 voles.



HOW TO

Sharpen a Pocketknife

A pocketknife is the perfect tool to cut rope, fillet a fish, or whittle a stick. But a dull knife is dangerous. You have to push harder to cut with a dull blade, and the knife is more likely to slip and slice your finger. Ouch! The good news is that it's easy to keep your knife sharp.

Heads Up!

Always get permission from an adult before using or sharpening a pocketknife.

HERE'S WHAT YOU NEED

Sharpening stone

You can find a sharpening stone — also called a whetstone — at most hardware stores. Look for a stone that has rough grit on one side and smooth grit on the other.

All-purpose oil

Heat can damage the blade of your knife. Applying oil to the sharpening stone reduces friction, which cuts down the heat you produce while sharpening your knife.

HERE'S WHAT YOU DO



1

Run your finger over both sides of the sharpening stone. One side will feel rougher than the other. Lay the stone on a sturdy table with the rough side up.

Drizzle oil on the stone. There's no need to drench it. A thin layer of oil will do.



2



3

Place the blade of your knife flat on the stone with the sharp edge pointing away from you. Raise the back of the knife (the unsharp edge) so that the blade forms a slight angle with the stone. For you mathematicians: Try to shoot for a 10- to 20-degree angle.

4

Keeping the angle constant, glide the knife away from you smoothly down the stone. Use light pressure and pretend that you're trying to shave a thin layer off the stone. If your knife is longer than the stone's width, sweep the knife sideways so that every bit of the blade, including the tip, gets sharpened in a single stroke.



5

Repeat the previous step five to 10 times, then flip the blade over and sharpen the other side using the same process.

6

Turn the sharpening stone over so that the smoother side is facing up. Add oil to the stone and repeat steps 3 to 5 to hone your knife to a razor's edge.



XPLOR MOR



Batty for Bugs

Bats bag bugs after dark by "seeing" with sound.

INSTRUCTIONS

This bat is a picky eater. It only eats mosquitoes, moths, beetles, and mayflies. And it always eats them in this order:



Mosquito Moth Beetle Mayfly

Can you help the bat eat his way through this swarm of insects? You can move up, down, left, and right, but not diagonally.

When hunting, a bat lets loose nearly 4,500 high-pitched squeaks each second. The squeaks hit nearby objects and bounce back to the bat's ears. This paints a picture in the bat's brain of its surroundings.

If an insect flies within striking distance, the bat scoops it up with its wings or tail then passes the morsel to its furry face for an in-flight snack. In an hour of hunting, a single bat can stuff its belly with 1,000 bugs!

WHAT IS IT?

— FROM PAGE 3 —

Giant swallowtail caterpillars look like blobs of bird poop. This helps them avoid predators. The caterpillar body appears to have many legs, but only the three pairs near the head are true legs. The rest look like toes but are bristly prolegs. These help the caterpillar cling to the branches of host trees like prickly ash. Adult giant swallowtails are Missouri's largest butterflies, with a wingspan of 3 to 5 inches. Learn more at mdc.mo.gov/field-guide.



F



START

END



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FREE TO MISSOURI HOUSEHOLDS

CRITTER CORNER Niangua Darter



This little member of the perch family is only 3 to 4 inches long, but it's big on color and style. Breeding males have orange-red bellies and shiny blue-green bars along their sides. These darters are state-endangered, found only in a few tributaries of the Osage River in west-central Missouri. If you float the Niangua River this summer, you may be lucky enough to spot its namesake fish swimming beneath your canoe. Learn more at mdc.mo.gov/field-guide.